Transmission Metric

Transmission Planning Staff meeting

1.10.2013

Transmission Metric

- Purpose:
- If we want a Metric, what do you measure?
- Why measure? Knowledge loop or feedback!
- 1. Where do you want to go with the results, i.e. what is the goal of learning performance?
- Best in the West? Worst in AZ?
- Having knowledge of a measure does not necessarily mean that you know something.
- Results have to be placed in context.

Transmission Metric

- Review fundamental understanding
- What is the purpose of a Transmission Network?

1. Deliver kWh to customers
2. Accept delivery of kWh from resource

Which is a result of why do we build transmission?

Serve customers and allow generation to be delivered to customers.

Transmission Metric

- How does a transmission system perform?
- Equate to car performance
- By design VW vs. BMW
- By maintenance practices
- By operating practices
- Today's SRP Transmission system is a fortunate legacy of prudent design practices of 20, 30, 40 years ago.

Transmission Metric

Goal of the Metric is to determine current performance and to not allow degradation of performance

JD Power Awards numerous in a row

Need to think if the cost of this performance is necessary. Duke Power Coal reliability example.

Transmission Metric

- The Metric:
- 1st : Customer outages by transmission interruptions (Distribution Planning)
- 2nd : Generation deliveries interrupted by Transmission (GADS)
- 2 categories of outages
- – Random & Non – Random
- Random world, influences occurrences
- Non – Random is what we target or use

Transmission Metric

- Random outages
- Customer caused, foreign system, storms, wind, lightning…
- Parked for now, there may be much benefit in examination of the random outages relative to design parameters, may lead to change design.

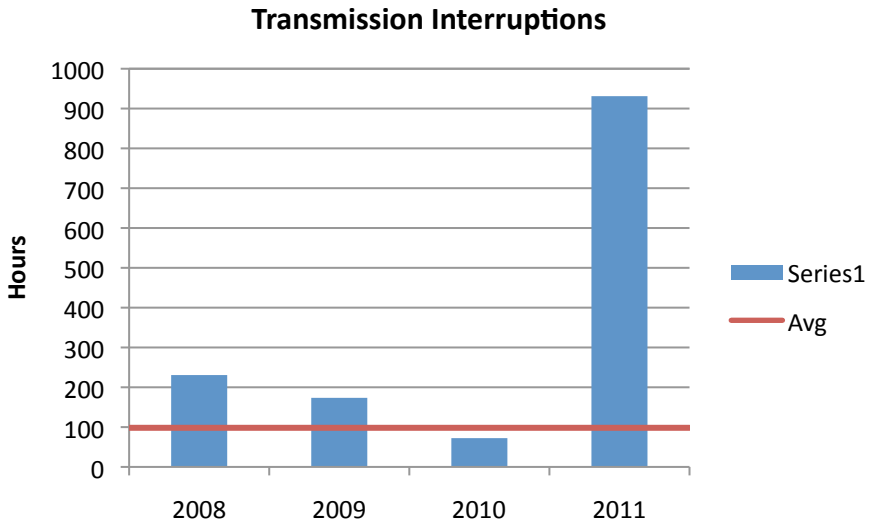
Transmission Metric

- 3rd : Component of the Metric is transmission forced non – random outages. Why?
- These outages show the amount of un - availability in the network, the more time any element is out there is probability of other outages which is the slippery incline to large events

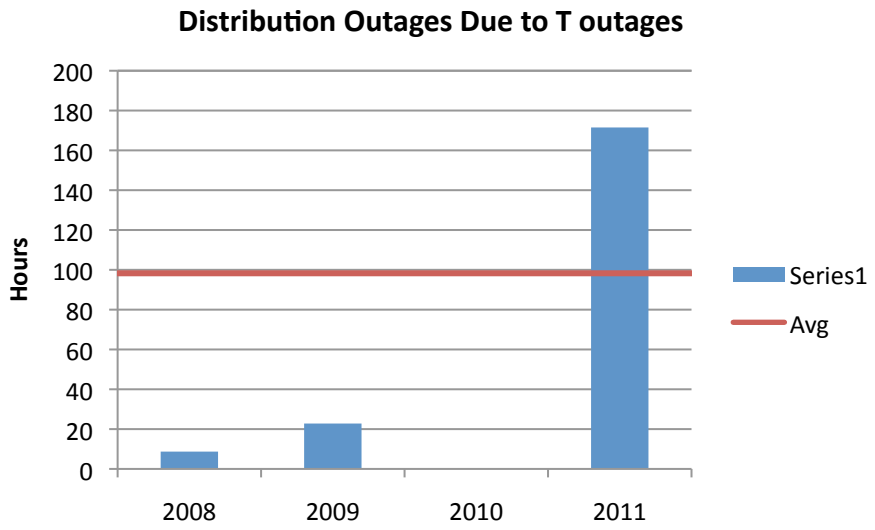
Transmission Metric

- The metric is duration not frequency of these occurrences

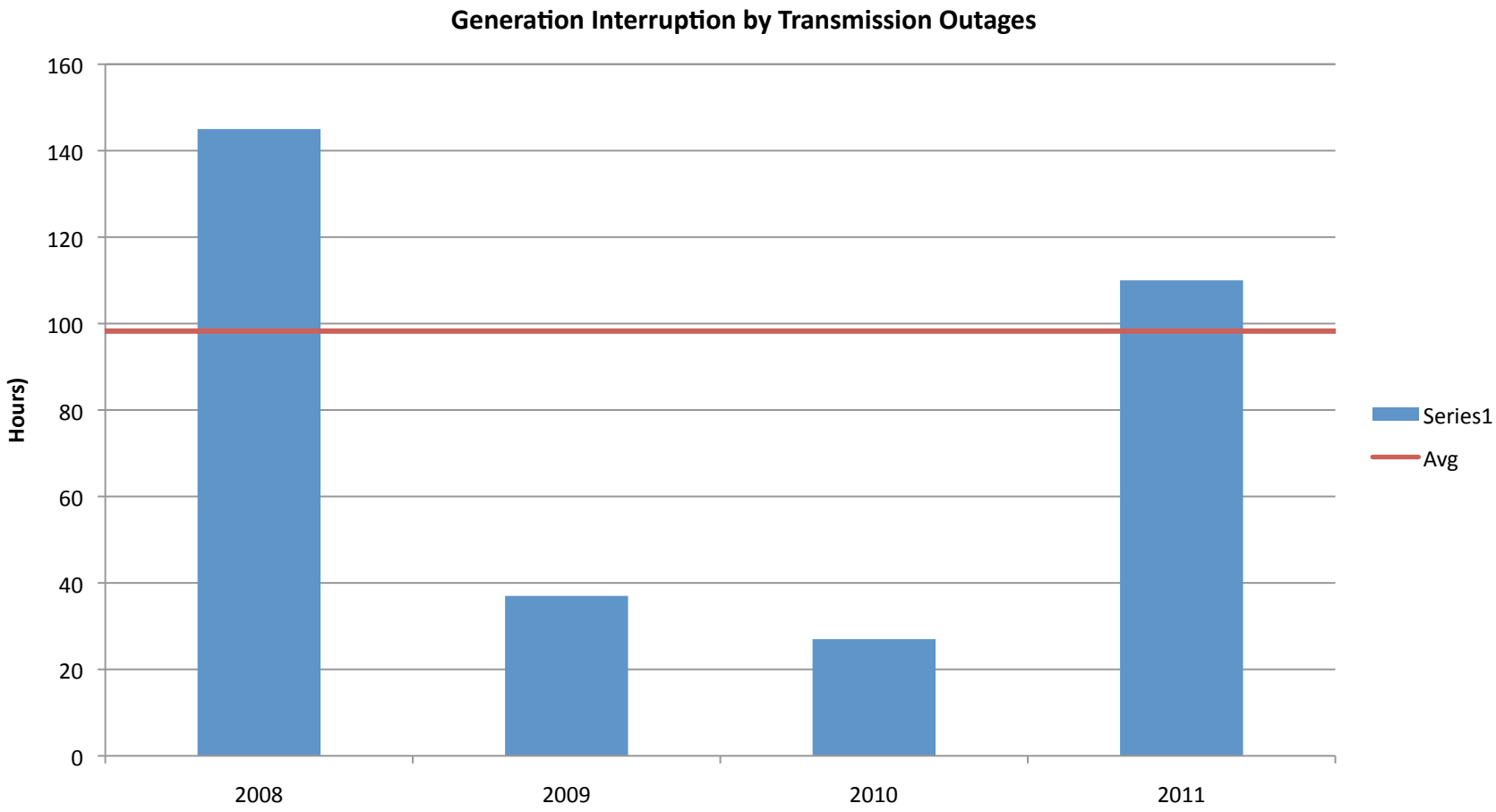
Transmission System Interruption Duration



Distribution Interruptions Caused by Transmission



Generation Interruptions Caused by Transmission



Transmission Metric

- Why is 2011 so high?
- Thunderstone transformer outages of June 30th.
- Next Step:
- Inject 2012 Outage Data
- Develop Target, based on past Performance and GOAL

Transmission Metric

- Metric demands reaction
  - Executive Management will need to reinforce metric with targeted spending to reduce the duration of these outages